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PACIFIC WEST REGIONAL OFFICE Memorandum

L7617 (PWRO-P)

JAN 27 2006

Memorandum

To: Superintendent, Lake Mead National Recreation Area

From: Regional Director, Pacific West Region

Subject: Environmental Compliance for Replacing Water - Sewer Systems

The finalized *Finding of No Significant Impact* for replacing water distribution and sewage treatment systems is approved. To complete this particular compliance effort, at the time when the park announces the decision, the *Errata* which was prepared should be timely distributed to all individuals and organizations that received the supporting environmental assessment.

Jonathan B. Jarvis

Attachment

cc:
DSC-PM
PWR-LIC

FINDING OF NO SIGNIFICANT IMPACT

REPLACE WATER DISTRIBUTION SYSTEMS AND SEWER COLLECTION SYSTEMS PARKWIDE

**Lake Mead National Recreation Area
Clark County, Nevada and Mojave County, Arizona**

PURPOSE AND NEED

The National Park Service (NPS) will rehabilitate portions of the water distribution and wastewater collection systems in eight developed areas of Lake Mead National Recreation Area (NRA): Boulder Beach, Callville Bay, Cottonwood Cove, Echo Bay, Katherine Landing, Las Vegas Bay, Overton Beach, and Temple Bar. Katherine Landing and Temple Bar are in Mohave County, Arizona; the other six sites are in Clark County, Nevada.

This action is needed because of numerous safety and operational issues with the water distribution and wastewater collection systems. The water distribution systems are old and deteriorated, fail on a regular basis, do not provide adequately for fire safety, do not comply with fire and plumbing codes, and are currently operating out of compliance with the regulations governing public water systems for the state of Nevada. The water distribution systems suffer from pipe breaks, dead ends, low or excessively high pressure zones, nonworking valves, and other major system impairments. Throughout the NRA, the wastewater systems are in an advanced stage of deterioration and suffer from severely corroded pipes, failing manholes, and leakage of raw sewage. As a result of these extensive problems with the wastewater systems throughout the NRA, the NRA is not in compliance with state and federal water pollution control requirements.

ALTERNATIVES

Selected Action

The selected action is the preferred alternative, as described in the environmental assessment. The action would include rehabilitation of the water distribution and wastewater collection systems for eight developed areas within Lake Mead NRA including Boulder Beach, Callville Bay, Cottonwood Cove, Echo Bay, Katherine Landing, Las Vegas Bay, Overton Beach, and Temple Bar.

Major components of water distribution work include replacing aged and deteriorated water lines and mains, replacing aged and inoperable main-line valves and adding additional valving; upgrading the size of existing mains to meet code requirements; the addition of new mains to

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create loops that increase system efficiency and reliability and reduce outages, and additional fire hydrants to meet code requirements; additional metering to better manage water usage; additional water storage to meet flow demand requirements; adding and upgrading backflow prevention devices to meet current code requirements; and replacing existing campground surface flood irrigation systems with subsurface drip irrigation systems. The improvements would serve to update the existing water lines, but are not in response to additional identified uses or the ability to provide additional supplies to current users, except in the case of fire fighting where additional hydrants would provide additional supplies of water, as needed. The new water storage tanks would primarily provide a gravity-fed supply of water for fire fighting capabilities.

Improvements of the wastewater collection systems include replacing aged and deteriorated force mains; replacing or rehabilitating deteriorated manholes; replacing deteriorated manhole frames and covers; replacing or relining existing deteriorated gravity sewerlines; providing odor control for vented sewer gases at selected locations; realigning selected sections of existing gravity sewerlines; increasing the capacity of selected gravity lines; and providing other miscellaneous upgrades to improve the reliability and efficiency of the wastewater collection system. Elimination of wastewater leakage would result in a slight increase in the amount of wastewater reaching the wastewater treatment facilities. However, these facilities were designed to accommodate wastewater quantities that could be carried by fully functioning sewerlines; therefore, no modification to wastewater facilities would be required in conjunction with the sewerline repair.

Common work elements will include excavation of the old lines and other components (e.g., valves, manholes, cleanouts, etc.), removal and disposal of old piping and other components, installation of new lines and components, and backfill and compaction after placement of the new lines and components. Reclamation of the disturbance by topsoil replacement and reseeding with native species will also occur. In locations where existing plantings contribute to the cultural landscape, vegetation will be replaced in-kind. Some portions of pipeline will be abandoned in place by cutting the pipe and sealing the ends. In addition, some pipeline to be replaced will not be removed, but rather will be abandoned in place using the same method previously described.

The project is planned to be executed in phases. There will be four phases with the contractor limited to work in only two developed area during each phase. Each phase is estimated to require six months to complete for an estimated total construction period of two years.

OTHER ALTERNATIVES CONSIDERED

The other alternative considered was the no-action alternative (alternative A). The no-action alternative will continue existing conditions for water and wastewater systems at Lake Mead NRA. Existing waterlines and sewerlines, manholes, valves, and fire hydrants would remain in use in their current configuration. Additional fire hydrants, backflow prevention devices, and hose bibs would not be installed. Pipe breaks, low or high pressure problems, and nonworking valves would continue to plague the systems. Water loss through leakage and pipe breaks

would continue. Both the water and sewer systems would continue to be out of compliance with federal and state regulations.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

The environmentally preferred alternative is determined by applying criteria identified in section 101 of the National Environmental Policy Act (NEPA) to each alternative considered. In accordance with NEPA, the environmentally preferred alternative will (1) fulfill the responsibility of each generation as trustee of the environment for succeeding generations; (2) assure for all generations a safe, healthful, productive, and aesthetically and culturally pleasing surrounding; (3) attain the widest range of beneficial uses of the environment without degradation or other undesirable and unintended consequences; (4) preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice; (5) achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The selected action to replace water distribution systems and sewer collection systems parkwide is the environmentally preferred alternative. After review of potential impacts to resources and visitors and after incorporating measures into the selected action to avoid or minimize impacts, the selected action achieves the greatest balance between assuring a safe, healthful, and aesthetically attractive environment; accommodating a wide range of uses without degrading the environment or posing risks to health and safety; preserving and enhancing important aspects of a diverse national heritage; and achieving a balance between resource and visitor use. Specifically, the selected action will:

- protect public and employee health, safety, and welfare by addressing safety concerns associated with providing a safe and adequate potable water supply, and eliminating ongoing leakage of untreated sewage, and providing adequate fire protection (criteria 1 through 3)
- improve operations efficiency and sustainability by reducing the need for numerous emergency repairs to the water and wastewater systems and the consumption of depletable resources associated with such repair work (criteria 1 and 6)

MITIGATION

Mitigation measures have been incorporated into the selected action to reduce impacts. Mitigation measures include clearly defining construction zones; minimizing introduction of nonnative species; employing best management practices to minimize erosion, sedimentation, noise, and dust emissions, blending cut areas into the natural environment; and minimizing new disturbance.

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Mitigation measures for the replacement of water distribution systems and sewage collection systems throughout the NRA are included in the table below:

Resource Area	Mitigation	Responsible Party
General Considerations	The National Park Service project manager will ensure that the project remains confined within the parameters established in the compliance documents and that mitigation measures are properly implemented.	National Park Service
	Construction zones will be identified and flagged before beginning the construction work and all disturbances will be confined to the flagged areas. All project personnel will be instructed that their activities must be confined to locations within flagged areas and all equipment and materials must remain within these areas. Disturbance beyond the actual construction zone will be prohibited. This does not exclude necessary temporary structures such as erosion-control fencing.	National Park Service / Contractor
	All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project work limits upon project completion. Any asphalt or concrete surfaces damaged due to work on the project will be repaired to original condition. All demolition debris will be removed from the project site, including all visible concrete and metal pieces.	Contractor
	Construction activities will be coupled with water sprinkling, as needed, to reduce fugitive dust plumes.	Contractor
	Idling of construction vehicles will be limited to reduce construction equipment emissions.	Contractor
	Work in washes will be performed between October and April, to the extent practicable, to avoid peak thunderstorm events and wash erosion.	Contractor
	Best management practices to reduce spills will be utilized during refueling and other activities that may release petroleum products into the environment.	Contractor
	A hazardous spill plan will be in place, stating what actions will be taken in the case of a spill and preventive measures to be implemented such as the placement of refueling facilities, storage, and handling of hazardous materials, etc.	Contractor
	All fuel, transmission or brake fluid leaks, or other hazardous waste leaks, spills, or releases will be reported immediately to the designated environmental manager. The environmental manager will be responsible for spill material removal and disposal to an approved offsite landfill and, if necessary, will notify the appropriate federal agency.	National Park Service / Contractor
	All equipment on the project will be maintained in a clean and well-functioning condition to avoid or minimize contamination from automotive fluids; all equipment will be checked daily.	Contractor
	Staging for construction vehicles and equipment will be located in previously disturbed areas, outside of high visitor use areas, and will be clearly identified in advance.	Contractor

Resource Area	Mitigation	Responsible Party
Soils	<p>Best management practices for drainage and sediment control will be implemented to prevent or reduce nonpoint source pollution and minimize soil loss and sedimentation in drainage areas. Use of best management practices in the project area for drainage area protection will include all or some of the following actions, depending on site-specific requirements:</p> <ul style="list-style-type: none"> • Keep disturbed areas as small as practical to minimize exposed soil and the potential for erosion. • Locate waste and excess excavated materials outside of drainages to avoid sedimentation. • Install silt fences, temporary earthen berms, temporary water bars, sediment traps, stone check dams, or other equivalent measures (including installing erosion-control measures around the perimeter of stockpiled fill material) as necessary prior to construction. • Conduct regular site inspections during the construction period to ensure that erosion-control measures were properly installed and are functioning effectively. • Store, use, and dispose of chemicals, fuels, and other toxic materials in an appropriate manner. • Revegetate disturbed areas as soon as possible after construction is completed. 	Contractor
	<p>Impacts and potential compaction and erosion of bare soils will be minimized in all undisturbed areas by salvaging the top 3-4 inches of topsoil before construction begins, storing that topsoil in a designated area with construction fence around it, then placing the salvaged topsoil on restoration areas. After topsoil is replaced, it will be given a fine spray of water to help settle the soil and uncover rock in the soil, and bring up the soil fines to create a crust to help prevent wind and water erosion.</p>	Contractor
	<p>No vehicle or equipment tracks will be allowed to remain after construction is complete. At a minimum, all disturbed areas will be raked out prior to spraying with water to reduce the appearance of vehicle tracks and discourage future redistribution.</p>	Contractor
Vegetation	<p>In an effort to avoid introduction of nonnative/ noxious plant species, no imported topsoil will be used.</p>	Contractor
	<p>Most areas of new disturbance will be allowed to return to native vegetation naturally over time as disturbance will primarily occur in sparsely vegetated areas for which active revegetation efforts are not efficient.</p>	National Park Service
	<p>For areas of special concern determined to be appropriate for active revegetation, some hand salvaging of cryptogamic crust and plants prior to construction may be required. The cryptogamic crust and plants will then be replaced after topsoil is replaced. Artificial desert varnish will be applied, as appropriate, to provide a more natural appearance. The extent of active revegetation and the exact techniques will be site dependent.</p>	National Park Service / Contractor
	<p>For those areas where the disturbance occurs in a potential cultural landscape or potential historic district, the vegetation will be restored in-kind to maintain the cultural and historic character.</p>	National Park Service

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Resource Area	Mitigation	Responsible Party
Vegetation	Reclaimed areas will be monitored after construction to determine if reclamation efforts are successful or if additional remedial actions are necessary. Remedial actions could include installation of erosion-control structures and controlling nonnative plant species.	National Park Service
	<p>Undesirable plant species will be controlled, as necessary. To prevent the introduction and minimize the spread of nonnative vegetation and noxious weeds, the following measures will be implemented during construction:</p> <ul style="list-style-type: none"> • Minimize soil disturbance. • Pressure wash and/or steam clean all construction equipment to ensure that all equipment, machinery, rocks, gravel, or other materials are cleaned and weed free before entering Lake Mead NRA. • Cover all haul trucks bringing asphalt or other fill materials from outside the NRA to prevent seed transport. • Limit vehicle parking to existing disturbed areas where possible. • Obtain all fill, rock, or additional topsoil from the project area, if possible. If not possible, obtaining weed-free sources from National Park Service approved sources outside the NRA will be required. • Initiate restoration of disturbed sites immediately following construction activities. • Monitor disturbed areas following construction to identify growth of noxious weeds or nonnative vegetation. Treatment of nonnative vegetation will be completed in accordance with NPS-13, <i>Integrated Pest Management Guidelines</i>. 	National Park Service / Contractor
Wildlife	The contractor will be required to maintain strict garbage control so that scavengers (e.g., corvids) are not attracted to the project area. No food scraps will be discarded or fed to wildlife.	Contractor
Threatened and Endangered Species and Species of Special Concern	A desert tortoise education program will be presented by a qualified biologist to all personnel onsite during construction activities. This program will contain information concerning the biology and distribution of the desert tortoise, its legal status and potential occurrence in the proposed project areas, the definition of "take" and associated penalties, measures designed to minimize the effects of construction activities, the means by which employees can facilitate this process, and reporting requirements to be implemented when desert tortoises are encountered. Personnel will be advised to limit their activities to designated areas and check underneath vehicles before moving them, as desert tortoises often seek shelter under parked vehicles. Personnel shall be advised to watch for desert tortoises on roads and to not handle or harass them.	National Park Service
	Workers will be instructed to immediately report the presence of any desert tortoise to the qualified biologist.	National Park Service / Contractor

Resource Area	Mitigation	Responsible Party
Threatened and Endangered Species and Species of Special Concern	<p>Before surface-disturbing activities, a qualified desert tortoise biologist will conduct a clearance survey to locate and remove desert tortoises using techniques providing full coverage of all areas. All desert tortoise burrows, and other species' burrows that may be used by desert tortoises, will be examined to determine occupancy of each burrow by desert tortoises. In accordance with <i>Procedures for Endangered Species Act Compliance for the Mohave Desert Tortoise</i> (USFWS 1992), a qualified desert tortoise biologist shall possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign. In addition, the biologist shall have the ability to recognize and accurately record survey results. The qualified biologist will be approved by the U.S. Fish and Wildlife Service (USFWS) prior to commencement of project activities. Only the approved qualified biologist will handle desert tortoises.</p>	National Park Service
	<p>All potential desert tortoise burrows found within the construction limits shall be identified and flagged for avoidance or excavation. Desert tortoise burrows that must be disturbed will be cleared of desert tortoises and eggs, and collapsed by a qualified biologist in accordance with USFWS-approved protocol (<i>Desert Tortoise Council Guidelines for Handling Desert Tortoises During Construction Projects</i> 1994, revised 1999). If a desert tortoise burrow is occupied by a desert tortoise in brumation (reptilian form of hibernation), and the qualified biologist determines that excavation of the burrow and removal of the desert tortoise is not necessary, the burrow will be blocked during project activities and unblocked when potentially harmful activities have been completed. If blocked, the burrow will be checked a minimum of once in the morning, and again at the end of the day. If the desert tortoise becomes active, it will be relocated as stated above.</p>	National Park Service
	<p>Desert tortoises will be handled and relocated by a qualified desert tortoise biologist in accordance with USFWS protocol (<i>Desert Tortoise Council</i> 1994, revised 1999). Burrows containing desert tortoises or nests will be excavated with hand tools to allow removal of desert tortoises or desert tortoise eggs. Desert tortoises moved during the desert tortoise inactive season or those in hibernation, regardless of date, will be placed into an adequate burrow; if one is not available, one will be constructed in accordance with USFWS protocols (<i>Desert Tortoise Council</i> 1994, revised 1999). During mild temperature periods in the spring and early fall, desert tortoises removed from the site will not necessarily be placed in a burrow. Desert tortoises and burrows will be relocated only to federally managed lands. All desert tortoise handling and excavations, including nests, will be conducted by a qualified desert tortoise biologist, in accordance with USFWS-approved protocol.</p>	National Park Service
	<p>Special precautions will be taken to ensure that desert tortoises are not harmed as a result of their capture and movement during extreme temperatures (air temperatures below 55 degrees Fahrenheit [°F] or above 95°F). Under such adverse conditions, captured desert tortoises will be monitored continually by an authorized biologist until the desert tortoise exhibits normal behavior. If a desert tortoise shows signs of heat stress, procedures will be implemented as identified in USFWS-approved protocols (<i>Desert Tortoise Council</i> 1994, revised 1999).</p>	National Park Service

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Resource Area	Mitigation	Responsible Party
Threatened and Endangered Species and Species of Special Concern	All located desert tortoises and desert tortoise eggs will be relocated offsite by a qualified biologist, 300 to 1,000 feet into adjacent undisturbed habitat. A pair of new, disposable latex gloves will be used for each desert tortoise that must be handled. After use, the gloves will be properly disposed. Desert tortoises found above ground will be placed under a marked bush in the shade. A desert tortoise located in a burrow will be placed in an unoccupied burrow of similar size and orientation or inside an artificially constructed burrow of the same size and orientation as the one from which it was removed, using the protocol for burrow construction in section B.5.f. of the revised Desert Tortoise Council guidelines (USFWS 1999). Any desert tortoise found within 1 hour before nightfall will be placed individually in a clean cardboard box and kept overnight in a cool, predator-free location. To minimize stress to the desert tortoise, the box will be covered and kept upright. Each box will be used only once and will then be discarded. The desert tortoise will be released the next day, as stated above.	National Park Service
	The onsite biologist will record each observed or handled desert tortoise. Information will include the following: location, date and time of observation, whether tortoise was handled, general health and whether it voided its bladder, location desert tortoise was moved from and location moved to, and unique physical characteristics of each tortoise. Reports documenting effectiveness and compliance with the desert tortoise protection measures will be prepared every 6 months during the proposed construction. A final report will be submitted to the USFWS southern Nevada field office in Las Vegas, Nevada, within 90 days of completion of construction.	National Park Service
	The qualified biologist will acquire all appropriate state permits or letters of authorization prior to handling desert tortoises and their parts, and prior to initiation of any activity that may require handling of desert tortoises.	National Park Service
	Project activities that may endanger a desert tortoise will cease if a desert tortoise is found on or moves onto a project site. Project activities will resume after the biologist removes the desert tortoise from danger or after the desert tortoise has moved to a safe area. Stockpiled pipes that could attract desert tortoises will be capped or checked by a desert tortoise monitor before use.	National Park Service / Contractor
	During construction activities, the qualified biologist will conduct periodic onsite surveys to ensure that desert tortoises have not moved into areas cleared for construction.	National Park Service
	During the desert tortoise active season (March 1 through October 31), all trenches and other excavations with side slopes steeper than a 1-foot rise to 3-foot length will be immediately backfilled prior to being left unattended, or covered with plywood or a similarly impassable material. An open trench or other excavation will be inspected for entrapped animals immediately prior to backfilling. If, at any time, a desert tortoise is discovered within a trench, all activity associated with that trench will cease until a qualified biologist has removed the desert tortoise, in accordance with USFWS-approved guidelines (DTC 1999).	National Park Service / Contractor
	Stockpiled pipes that could attract desert tortoises will be capped or checked by a desert tortoise monitor before use.	National Park Service / Contractor
	Herbicides will not be used in the project area unless approved, in writing, by the USFWS.	Contractor

Resource Area	Mitigation	Responsible Party
Threatened and Endangered Species and Species of Special Concern	Vehicles will not exceed 25 miles per hour on nonpublic access roads. The qualified biologist will monitor speed limit compliance during project activities and report instances of noncompliance to the National Park Service and USFWS.	National Park Service / Contractor
	A litter-control program will be implemented during construction to minimize predation on desert tortoises by common ravens (<i>Corvus corax</i>) drawn to the project site. The program will include the use of covered, raven-proof trash receptacles, removal of trash from project areas to the trash receptacles following the close of each work day, and proper disposal of trash in a designated solid waste disposal facility. Precautions will be taken to prevent litter from blowing out along the road when trash is removed from the site. Any observation of raven predation on desert tortoises in the project area will be reported to the qualified biologist who will report the incident to the USFWS. Trash removal will reduce the attractiveness of the area to opportunistic predators such as desert kit fox, coyotes, and common ravens. Construction waste will be removed from the site daily and disposed of properly.	Contractor
	Prior to surface disturbance activities within desert tortoise habitat, the National Park Service or the project proponent will pay a remuneration fee per acre of proposed disturbance into the Desert Tortoise Public Lands Conservation Fund Number 730-9999-2315 (section 7 account). This fund is administered by Clark County, Nevada, and used for securing and enhancing desert tortoise habitat and tortoise research.	National Park Service
	A razorback sucker/bonytail chub spawning areas educational program will be presented to all personnel present during construction. This program will contain information pertaining to the biology and distribution of the razorback sucker and bonytail chub, their legal status and occurrence in the lake waters near project areas, the definition of "take" and associated penalties, measures designed to minimize the effects of construction activities, the means by which individuals can facilitate this process, and reporting requirements and corrective actions to be implemented in the unlikely event that breaches to these conservation measures should be observed.	National Park Service
	All construction personnel will be advised not to feed fish and to dispose of all refuse properly. Trash and food items will be disposed of in predator-proof containers with resealing lids. Trash containers will be emptied daily and waste will be removed from the project area and disposed of in an approved offsite landfill. These measures will be implemented to avoid attracting nonnative fish that interact negatively with razorback suckers and bonytails.	Contractor
Archeology	Should unknown archeological resources be uncovered during construction, work will be halted in the discovery area, the site secured, and Lake Mead NRA will consult according to 36 CFR 800.13 and, as appropriate, provisions of the Native American Graves Protection and Repatriation Act of 1990.	National Park Service
	In compliance with the Native American Graves Protection and Repatriation Act of 1990, the National Park Service will also notify and consult concerned American Indian tribal representatives for the proper treatment of human remains, funerary, and sacred objects should these be discovered during the project.	National Park Service

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Resource Area	Mitigation	Responsible Party
Archeology	An archeological monitor will be present during any ground-disturbing activities in the culturally sensitive areas at Echo Bay and Temple Bar.	National Park Service
	Archeological specimens found within the construction area will only be removed by the National Park Service or their designated representatives.	National Park Service
Historic Structures and Districts	In areas where features contributing to the integrity of a historic structure or historic district may be affected orange caution construction fencing will be used to close or mark areas that are to be avoided by construction and equipment.	National Park Service
	Any vegetation and/or features contributing to the historic structure or district that may be removed will be replaced in kind.	National Park Service / Contractor
Cultural Landscapes	In areas where features contributing to a cultural landscape may be affected, orange caution construction fencing will be used to close or mark areas that are to be avoided by construction and equipment.	National Park Service
	Any vegetation and/or features contributing to a cultural landscape that may be removed will be replaced in kind.	National Park Service / Contractor
Visitor Experience	All trenching in visitor use areas (parking lots, trailer villages, campgrounds, etc.) will be barricaded and signed with warnings in order to keep visitors at a safe distance from the construction zone.	Contractor
	Facilities (comfort stations, dump stations, hose bibs) that are temporarily out of order due to water and sewer system rehabilitation will be signed with directions to the nearest location of operational facilities.	Contractor
	If necessary, individual campsites or campground loops impacted by construction will be closed during periods of construction activity.	National Park Service
	To minimize disturbance to visitors, construction activities would be limited to two developed areas at any one time.	
Park Operations	Concessions will be notified at least 24 hours in advance of temporary utility outages due to water and sewer system rehabilitation.	National Park Service
	Length of outages will be kept to a minimum to reduce economic impacts to concessions and visitor inconvenience.	Contractor
Health and Safety Health and Safety	Construction in floodplains and washes will be avoided during the rainy season. If project work were to occur during this time period, a safety plan for work in desert washes will be formulated and implemented.	National Park Service / Contractor
	Because of the deteriorated condition of the existing sewerlines, construction workers may encounter leaking raw sewage in the process of replacing sewerlines. Construction workers will be educated on proper handling of raw sewage or contaminated soils to prevent personal contamination and contraction of communicable diseases. The contractor will be required to provide water and equipment so workers could wash and disinfect after coming into contact with sewage.	Contractor
	The contractor will be required to formulate and implement a health and safety plan for the project that includes clearing of the utility corridors, trenching and shoring, work in desert washes, and handling of asbestos pipe.	Contractor

WHY THE SELECTED ACTION (PREFERRED ALTERNATIVE) WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined by 40 CFR 1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse and which on balance may be beneficial, but that may still have significant adverse impacts which require analysis in an environmental impact statement: No major adverse or beneficial impacts were identified that will require analysis in an environmental impact statement.

The selected action will have no or negligible impacts to air quality, wetlands, floodplains, ecologically critical areas, wild and scenic rivers and other unique natural areas, geology and geologic hazards, cultural resources, prime and unique farmland, socioeconomics, land use, environmental justice, Indian trust resources, scenic resources, lightscapes, or natural soundscapes.

The selected action will contribute short-term, negligible, adverse impacts to water quality, health and safety, and soils; short-term, negligible to minor, adverse impacts to cultural landscapes; and short-term, minor, adverse impacts to vegetation, wildlife, and visitor experience. There will be long-term, negligible to minor, adverse impacts to historic structures and districts; long-term, negligible, beneficial impacts to soils and wildlife; long-term, minor, beneficial impacts to vegetation and visitor experience; and long-term, moderate, beneficial impacts to health and safety and NRA operations.

The NPS completed formal consultation with the USFWS pursuant to section 7 of the Endangered Species Act of 1973, as amended. Impacts to the threatened desert tortoise will be short term, minor, and adverse, and long term, negligible, and beneficial. Impacts to the endangered razorback sucker and bonytail chub will be short term, minor, and adverse, and long term, minor, and beneficial. There will be no adverse impacts to critical habitat for the razorback sucker or bonytail chub from the selected action.

Degree of effect on public health or safety: The selected action will have a short term, negligible, and adverse impact to health and safety, and a long-term, moderate, beneficial impact to health and safety. Rehabilitation of the water systems will result in fewer waterline breaks, significantly reducing the probability of water supply contamination from raw sewage. In addition, the new water distribution pipelines will reduce the potential for treated water to become contaminated during transport. Rehabilitation of wastewater systems will result in fewer sewerline breaks that will have to be repaired by park maintenance staff, reducing the exposure of maintenance staff to raw sewage. The improvements to the fire hydrants and fire fighting water supplies will result in a beneficial impact to overall safety. Worker safety will be a concern during construction, but will be mitigated with education on safe operating practices.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas: As described in the environmental assessment, ecologically critical areas, floodplains, prime and unique farmland, and wild and scenic rivers, and wetlands will not be

affected. There are no known ethnographic, archeological, or Indian trust resources identified in the project area that could be affected by the current project actions.

There will be long term, negligible to minor, adverse impacts to historic structures and districts, and cultural landscapes from the selected action. There are eight structures (Temple Bar Visitor Center, Alan Bible Visitor Center at Boulder Beach, Boulder Beach maintenance building, Cottonwood Cove ranger station, Cottonwood Cove maintenance building, Echo Bay ranger station, Echo Wash bridge, and Las Vegas Wash ranger station) and three districts (Cottonwood Cove Developed Area District, Temple Bar Developed Area District, and Katherine Landing Public Service District) potentially eligible for listing on the National Register of Historic Places (NRHP) under the Mission 66 era. All of these structures and districts are less than 50 years old, but are managed as eligible because they exhibit all the character-defining characteristics as defined by the National Park Service. Most of the properties have associated designed cultural landscape features.

Some of the trenching involved in the selected action may impact the landscaping, paving, and/or walls associated with Temple Bar Visitor Center, Echo Bay ranger station, Las Vegas Wash ranger station, Boulder Beach maintenance building, as well as the landscaping, paving, curbing, and/or walls that contribute to the Cottonwood Cove Developed Area District, Katherine Landing Public Service District, and the Temple Bar Developed Area District. There is potential danger of undermining the walls or causing collapse by removing portions of the walls, and there is the possibility that other historic fabric of the designed landscape may be removed or replaced. In addition, potential effects could range from the removal of historic fabric of the cultural landscapes/districts to damage of features contributing to the integrity of the districts/landscapes. Mitigation measures to reduce or eliminate impacts to historic structures, districts, and cultural landscapes will include the replacement of vegetation and other features in-kind, the use of orange caution construction fencing to close/mark areas that need to be avoided by construction and equipment, and avoiding the removal of historic fabric.

Fire hydrants will be replaced in the vicinity of the Boulder Beach maintenance building, and replaced or moved in the vicinity of the Katherine Landing Public Service District and the Cottonwood Cove Developed Area District. Backflow preventers will be installed in the vicinity of the Temple Bar Visitor Center, the upper campground at Cottonwood Cove and the Katherine Landing Public Service District. The replacement of fire hydrants and backflow prevention devices will not be so obtrusive as to affect the integrity of the historic buildings, historic districts, and cultural landscapes.

Degree to which effects on the quality of the human environment are likely to be highly controversial: There were no highly controversial effects identified during either preparation of the environmental assessment or the public review period.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks: There were no highly uncertain, unique, or unknown risks identified during either preparation of the environmental assessment or the public review period.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration: The selected action neither establishes a National Park Service precedent for future actions with significant effects nor represents a decision in principle about a future consideration.

Whether the action is related to other actions with individually insignificant, but cumulatively significant impacts: The environmental assessment analyzed impacts to soils, vegetation, wildlife, threatened and endangered species and species of concern; historic structures and districts; cultural landscapes; water quality; visitor experience; health and safety; and National Recreation Area operations. As described in the environmental assessment, cumulative impacts were determined by combining the impacts of the selected action with other past, present, and reasonably foreseeable future actions. Past projects identified during scoping that have contributed to cumulative impacts include:

- rehabilitation of Callville Bay Road and of southern portions of Northshore Road
- replacement of the wastewater collection and treatment system at Willow Beach

Current actions and those projected for the future that could contribute to cumulative effects include:

- rehabilitation of northern segments of Northshore Road
- rehabilitation of the Overton Beach access road, and the Echo Bay access road
- relocation of the pipeline carrying treated effluent from the city of Las Vegas
- redevelopment work at Willow Beach and the future modernization of campgrounds potentially eligible for listing on the NRHP in the Cottonwood Cove, Temple Bar, and Katherine Landing developed areas

Population growth and associated land-use changes for the region, recreational development within the Lake Mead NRA, improvements to other Lake Mead NRA road segments, threatened and endangered species protection initiatives and programs, and reduced lake levels also contributed to cumulative effects.

The selected action, along with past, present, and reasonably foreseeable future actions, will have short- and long-term, minor, adverse impacts on soils and wildlife; short- and long-term, minor to moderate, adverse impacts on vegetation, desert tortoise, razorback sucker, and bonytail chub; long-term, negligible to minor, adverse impacts to historic structures and historic districts; short-term, negligible to minor, adverse impacts to cultural landscapes and water quality; short-term, negligible, adverse impacts to health and safety, and NRA operations; short-term, minor, adverse impacts to visitor experience; long-term, minor to moderate, beneficial impacts to water quality and health and safety; and long-term, minor, beneficial impacts to visitor experience and park operations.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat: Based on the species list provided by the USFWS, the special-status species of concern are the desert tortoise, the razorback sucker, and the bonytail chub. A biological assessment for the potential effects of the project on the desert tortoise, the razorback

sucker, and the bonytail chub was completed and submitted to the USFWS for their review. The USFWS issued a biological opinion on June 3, 2005, which concurred with the National Park Service determination that the project is not likely to adversely affect the razorback sucker or bonytail chub, and will not adversely modify critical habitat of the razorback sucker or bonytail chub.

Assuming implementation of the conservation measures as previously described, and the flow-through nature of the lake waters, it is not anticipated that the selected action will have detectable or measurable adverse impact on the critical habitat for the razorback sucker or bonytail chub. However, the selected action will result in conservation of at least 11 million gallons of water per year, and in a substantially reduced risk of a major sewage pollution event. These two effects represent long-term beneficial impacts to critical habitat for these two fish species.

The biological opinion goes on to state that no designated desert tortoise critical habitat will be affected by the project. The selected action will occur in a portion of desert tortoise range where densities are estimated to be low. Potential impacts to individuals and habitat in the project area will be further minimized through conservation measures. The 1.8 acres of upland habitat that will be lost for tank and road placement in Nevada constitutes marginal habitat at best, and when placed in the context of its proximity to highly developed areas, becomes unsuitable. Conservation measures that will be implemented to further reduce the potential adverse effects associated with project activities include: (1) pre-construction clearance surveys; (2) monitoring, removal, and ingress prevention activities during construction in months when desert tortoises are active; (3) conducting an education program for all project employees; and (4) establishment of a litter control program during construction.

The determination of effect on the desert tortoise as discussed in the biological opinion is “*may affect, likely to adversely affect.*” This determination is equivalent to a short-term, minor, adverse impact. Desert tortoise populations will benefit from the elimination of raw sewage leakage and from the elimination of pipe breaks. The beneficial impacts will be negligible and long term. The USFWS determined that the project is not likely to jeopardize the continued existence of the desert tortoise.

Whether the action threatens a violation of federal, state, or local environmental protection laws: The selected action violates no federal, state, or local environmental protection laws.

IMPAIRMENT OF PARK RESOURCES OR VALUES

The implementation of the selected action will not constitute an impairment of NRA resources or values. Impacts documented in the environmental assessment and summarized above will not affect resources or values key to the natural and cultural integrity of the NRA or alter opportunities for the enjoyment of the NRA. The selected action will not impair Lake Mead NRA resources and will not violate the National Park Service Organic Act. This conclusion is based on a thorough analysis of the impacts described in the environmental assessment, the

lack of agency and public comments received, and the professional judgment of the decision maker, in accordance with NPS *Management Policies* (2001). As described in the environmental assessment, implementation of the selected action (preferred alternative) will not result in major adverse impacts to a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation or proclamation of Lake Mead NRA, (2) key to the natural or cultural integrity of the NRA, or (3) identified as a goal in the NRA's *General Management Plan* or other relevant National Park Service planning documents.

PUBLIC INVOLVEMENT AND AGENCY CONSULTATION

Staff of Lake Mead NRA and resource professionals of the National Park Service-Denver Service Center, initiated internal scoping in February 2004. This interdisciplinary process defined the purpose and need, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the selected action to other planning efforts at the park.

A press release initiating scoping and describing the selected action was issued on March 19, 2004. Comments were solicited during a public scoping period that ended April 22, 2004. No comments were received.

The environmental assessment was made available for public and agency review and comment during a 4-week period from September 16, 2005 through October 17, 2005. Lake Mead NRA provided copies of the document to approximately 90 agencies, organizations, and interested parties on the NRA mailing list, including American Indian groups typically associated with Lake Mead NRA. In addition, the document was available for review on the park Web site, at 15 local libraries, and interested parties could contact the park by telephone or mail and request copies of the document. A press release was issued on September 21, 2005 and sent to local media, notifying the public of the availability of the environmental assessment.

One comment letter was received from the USFWS. Comments included a concern that the proposed water and sewer improvements did not adequately address the relationship between and cumulative effects of improvements proposed as a part of this environmental assessment and approved expansion of some of the recreational facilities covered by the *Lake Management Plan* and proposed relocation of the Overton marina to Echo Bay currently being addressed in the low water amendment to the *General Management Plan*. It was also noted that there were no reasons given for the increased water storage capacity at Echo Bay and Cottonwood proposed as part of the environmental assessment. In addition, the USFWS requested that the environmental assessment document address that the increased flow to the wastewater treatment system as a result of elimination of leakage can be adequately handled by the existing system.

None of the comments received introduced substantive new information nor raised issues not fully considered in the environmental assessment. No modifications to the selected action were made as a result of comments, although some of the comments required additional clarification to the environmental assessment. The *Lake Management Plan* and amendment to the *General*

FINDING OF NO SIGNIFICANT IMPACT

Management Plan were discussed in the environmental assessment, however clarification was added to the sections discussing water and sewer system improvements and the cumulative effects discussion to clarify that the new water distribution and wastewater collection systems would be capable of accommodating existing as well as future flows resulting from expansion or relocation of visitor use facilities identified in those plans. Verbiage was also added to clarify the need for the additional water storage tanks to be installed at Echo Bay and Cottonwood Cove would be to provide an adequate gravity-fed fire fighting water supply and reserve storage capacity in the event an outage to the supply system occurred. Regarding the elimination of leakage associated with the sewerlines, the text has been revised to state that the wastewater treatment facilities were designed to handle amounts of sewage that would travel through fully functioning sewerlines and that the capacity of the wastewater treatment facilities is adequate to accommodate this increase in wastewater flows. These additional clarifications have been added to the environmental assessment through an errata sheet, which will be attached to the *Replace Water Distribution Systems and Sewer Collection Systems Parkwide Environmental Assessment*.

The National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq.*), NEPA, National Park Service Organic Act, NPS *Management Policies* (2001), Director's Order – 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (2001), and Director's Order – 28: *Cultural Resources Management Guideline*, require consideration of impacts on cultural resources, either listed in or eligible to be listed in, the NRHP.

Compliance with section 106 of the National Historic Preservation Act was completed through consultation with the Arizona and Nevada SHPOs. On September 19, 2005 the Arizona SHPO concurred with a finding of no adverse effect. On November 29, 2005 the Nevada SHPO concurred with a finding of no adverse effect.

Compliance with section 7(c) of the Endangered Species Act of 1973, as amended, was completed through consultation with the USFWS and development of a biological assessment for the potential effects of the project on the razorback sucker, bonytail chub, and desert tortoise. The USFWS issued a biological opinion on June 3, 2005, stating that the project to rehabilitate the water distribution and wastewater collection systems parkwide is not likely to adversely affect the razorback sucker or bonytail chub, and will not adversely modify critical habitat of the razorback sucker or bonytail chub; and that the project is not likely to jeopardize the continued existence of the desert tortoise.

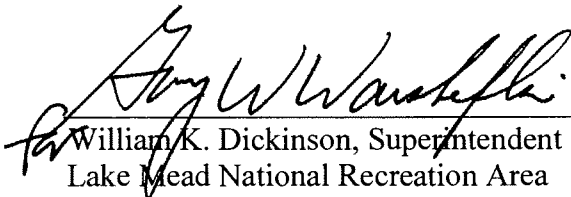
The NPS will identify and obtain permits required pursuant to the Clean Water Act prior to construction.

CONCLUSION

The selected action (preferred alternative) does not constitute an action that normally requires preparation of an environmental impact statement. The selected action (preferred alternative) will not have a major impact on the human environment. Negative environmental impacts that could occur are considered short term and negligible to minor in intensity and long term, negligible to minor in intensity. Mitigation measures will be incorporated into the selected action (preferred alternative) to reduce or eliminate impacts. There are no foreseen significant adverse impacts on public health, public safety, threatened or endangered species, historic properties, either listed in or eligible for listing in the NRHP, or other unique characteristics of the region. No highly uncertain or controversial impacts, unique or unknown risks, significant cumulative effects, or elements of precedence were identified. Implementation of the action will not violate any federal, state, or local environmental protection laws, nor will it cause impairment of Lake Mead NRA resources or values.

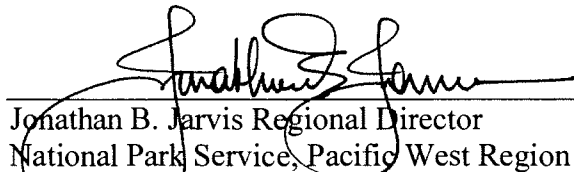
Based on the foregoing, it has been determined that an environmental impact statement is not required for this project and, thus, will not be prepared.

Recommended:


William K. Dickinson, Superintendent
Lake Mead National Recreation Area

1/20/06

Approved:


Jonathan B. Jarvis Regional Director
National Park Service, Pacific West Region

1/26/06

ERRATA SHEETS

ENVIRONMENTAL ASSESSMENT

REPLACE WATER DISTRIBUTION SYSTEMS AND SEWER COLLECTION SYSTEMS PARKWIDE

LAKE MEAD NATIONAL RECREATION AREA

These Errata are being prepared as a technical supplement to the *Replace Water Distribution Systems and Sewer Collection Systems Parkwide Environmental Assessment*. The errata sheets should be attached to the environmental assessment in order to have a full and complete record of the overall conservation planning and environmental impact analysis process.

The *Replace Water Distribution Systems and Sewer Collection Systems Parkwide Environmental Assessment* was available for public review and comment for approximately 4 weeks from September 16, 2005 through October 17, 2005. One comment letter was received during the public comment period. The comments received were screened to determine whether any new issues, reasonable alternatives, potential for significant impacts, or mitigation measures were suggested. The comments received did not identify new issues or alternatives, nor did they correct or add substantially to the facts presented in or increase the level of impact described in the environmental assessment. Comments in favor of or against the proposed action or alternatives, or comments that only agree or disagree with National Park Service policy, are not considered substantive (i.e., they did not challenge the accuracy of the analysis, dispute information accuracy, suggest different viable alternatives, and/or provide new information that makes a change in the proposal). The comments received, although not substantive, did result in changes to the environmental assessment. In addition, the National Park Service evaluated comments and determined that additional information was necessary in some areas of the environmental assessment to more fully explain the preferred alternative. No design or construction modifications to the preferred alternative were made as a result of comments.

The text changes to the environmental assessment are outlined below. Revised or new language is underlined. The environmental assessment will not be reprinted.

Location	Text Change
Page 16, Overview, 2nd paragraph. Last sentence.	<u>The new water storage tanks would primarily provide a gravity-fed supply of water for fire fighting capabilities.</u>
Page 16, Overview, 3rd paragraph. Sentence to be inserted after 3rd sentence.	<u>Elimination of wastewater leakage would result in a slight increase in the amount of wastewater reaching the wastewater treatment facilities. However, these facilities were designed to accommodate wastewater quantities that could be carried by fully functioning sewerlines; therefore, no modification to wastewater facilities would be required in conjunction with the sewerline repair.</u>
Page 22, Cottonwood Cove.	<u>Permanent Disturbance: A new 400,000-gallon water tank is proposed at Cottonwood Cove adjacent to the existing 200,000 gallon tank. Additional water storage would provide adequate gravity-fed fire fighting water supplies, which would be more reliable and energy efficient than the existing pump system.</u>

Location	Text Change
Page 23, Echo Bay.	<i>Permanent Disturbance:</i> A new 250,000-gallon water storage tank would be installed north of the road (figure 6). <u>Additional water storage would provide adequate gravity-fed fire fighting water supplies, which would be more reliable and energy efficient than the existing pump system.</u>
Page 64, 1st paragraph after bullet. Last sentence.	Changes associated with the amendment would occur primarily below the high-water line for Lake Mead and have negligible impacts to natural and cultural resources as a result. <u>The new water distribution and wastewater collection systems would be capable of accommodating existing as well as future flows resulting from expansion or relocation of visitor use facilities associated with the amendment and recreational development approved in the <i>Lake Management Plan</i>.</u>
Page 84, Preferred Alternative, Health and Safety.	The improvement of fire hydrants and <u>availability of water storage tanks providing gravity-fed fire fighting water supplies</u> would result in a beneficial impact to overall safety.